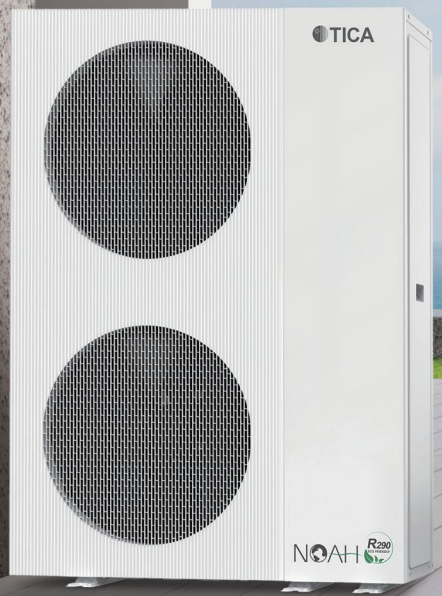
TICA®

NOAH

SUSTAINABILITY IS IN OUR NATURE

Heat pumps for an energy-efficient everyday life and a better world



R290
ECO friendly

INTRODUCTION

Since the introduction of TICA's first air-cooled heat pump at the end of the last century, we have been deeply committed to heat pump technology for nearly 30 years. With the continuous advancement of refrigerants, TICA has once again initiated innovations in heat pump systems. With the NOAH series, TICA was one of the first manufacturers to optimally implement the environmentally friendly and highly efficient properties of the refrigerant R290, thereby expanding the potential of this refrigerant.

LOW-CARBON

Building A Sustainable Environment

For a house with a living space of 180 square meters, a family of three can be heated with conventional radiators:

Replacing a gas-fired boiler with a TICA heat pump will reduce your emissions by an average of 12261kg CO_2 per year.
Replacing an oil-fired boiler with a TICA heat pump will reduce your emissions by an average of 17113 kg CO_2 per year.

R290

Brings unbeatable benefits to our heat pumps:

The R290 heat pump features a SCOP of up to 4.9, ensuring high energy efficiency and reduced running costs. Operating between –25°C and +46°C, it provides excellent hot water comfort and legionella protection without a backup heater. With a GWP of just 3, it offers an eco-friendly heating solution, balancing minimal environmental impact with optimal performance.

One Ton Of CO_2 Is Equivalent To:

8 months	household electricity consumption	**380L**	gasoline	**100m²**	mixed forest
7500km	by car	**5000km**	economical flight	**27000km**	by train

What is GWP ?

GWP is a comparative value that indicates the greenhouse effect of a greenhouse gas to be released into the environment. The higher the value, the worse the impact on the climate.

Exemplary GWPs of some refrigerants:

The value indicates the amount of CO_2 which has an equal global warming effect.
To calculate the CO_2 impact of a refrigerant, the amount contained in the heat pump is multiplied by its GWP value.

CO_2	1
R290	3
R32	675
R410A	2,088

Exemplary calculation:

R410A
1.8 kg of R410A×2088 GWP =3760 kg CO_2

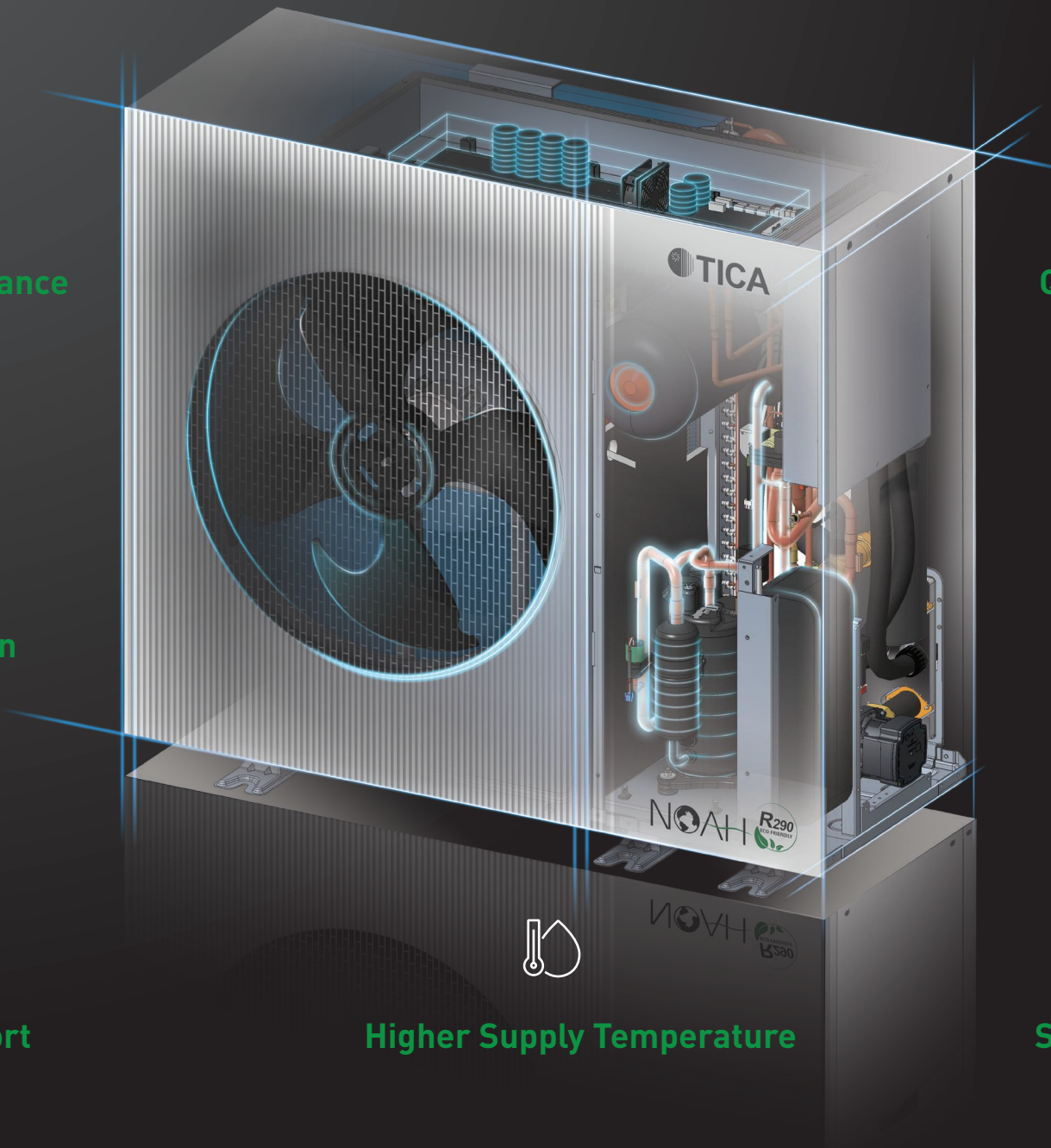
13-hour flight from London to Kuala Lumpur

R290 (NOAH)
0.6 kg of R290×3 GWP =1.8 kg CO_2

15 km drive by car

TICA's cutting-edge heat pump technology using natural refrigerant (R290) is the best testimony to its future environmental commitment:
The same heat pump, using R290, has only 0.05% of the greenhouse effect of traditional R410A .

TICA



Optimum Performance

Quiet Operation

Compact Design

Smart Control

Premium Comfort

Higher Supply Temperature

System Security

TICA SMART HOME

Link To The Future

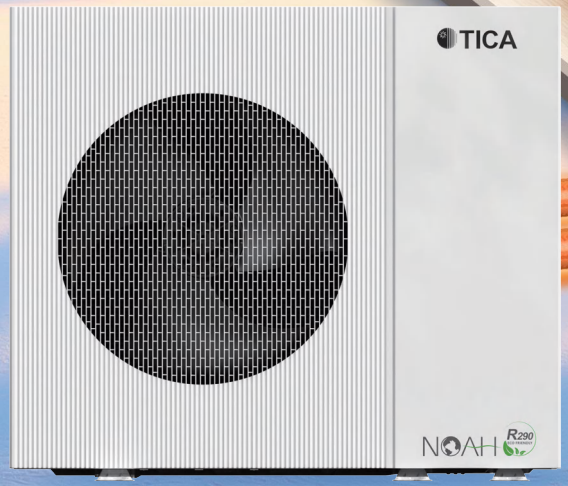
Smart energy management

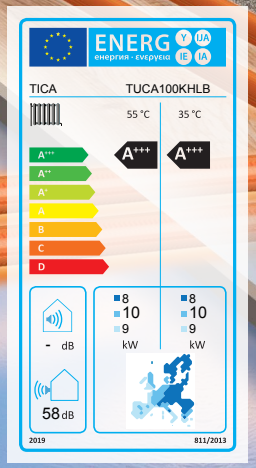
Comfortable living environment

Low carbon and environmental protection

OPTIMUM PERFORMANCE

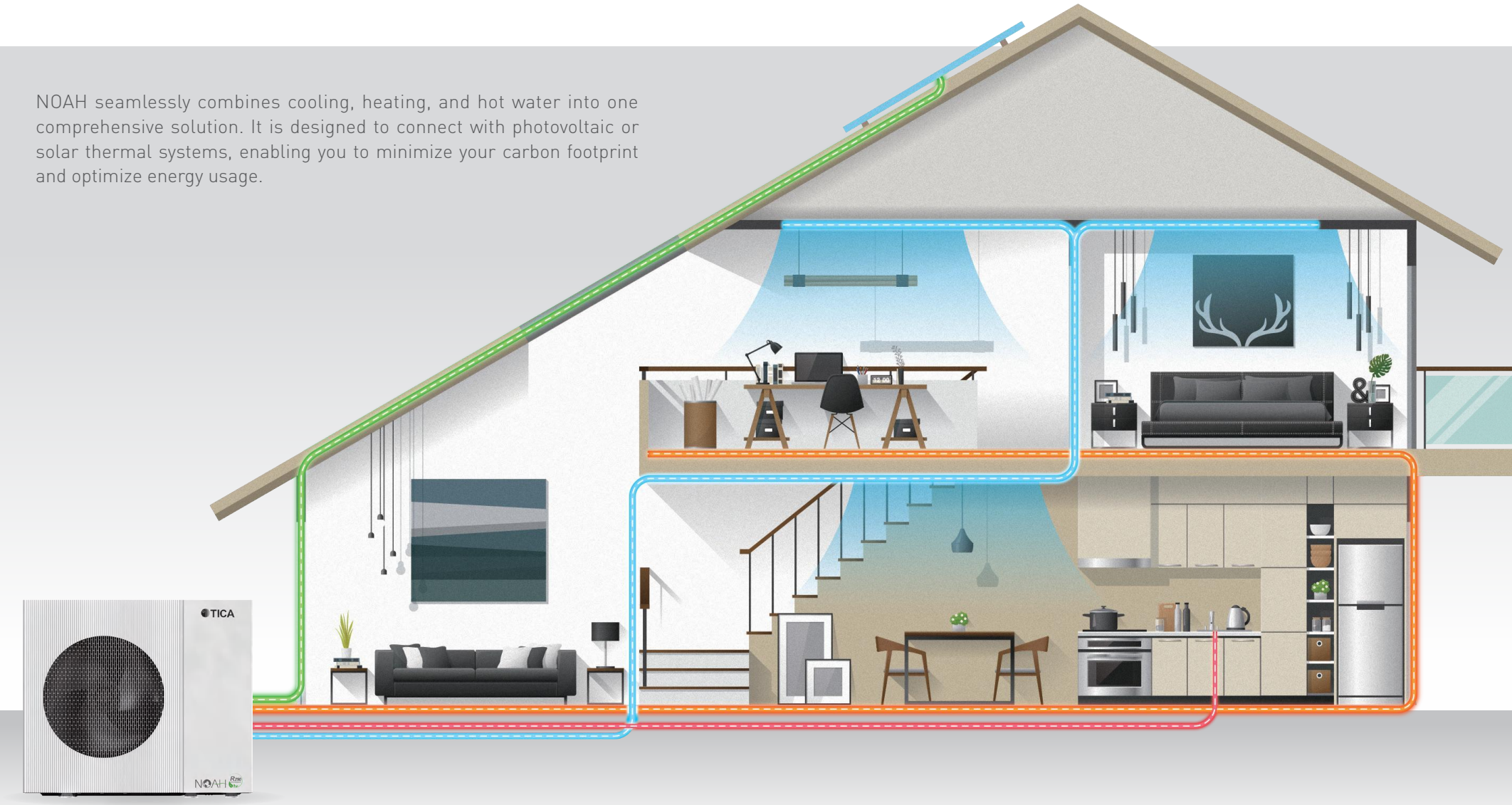
With certification from the EU Energy Efficiency Label, this product achieves an A+++ efficiency rating at water outlet temperatures of 35°C and 55°C. The entire range reaches a peak COP of 5.45 (A35W18), demonstrating top-tier energy efficiency and operational excellence.





PREMIUM COMFORT

NOAH seamlessly combines cooling, heating, and hot water into one comprehensive solution. It is designed to connect with photovoltaic or solar thermal systems, enabling you to minimize your carbon footprint and optimize energy usage.



QUIET OPERATION

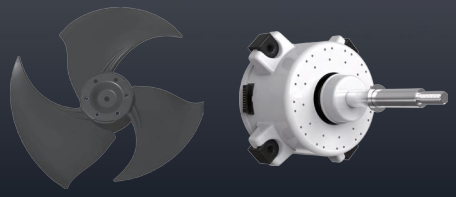
The use of efficient, low-speed fans and advanced soundproofing measures ensures that the noise from the outdoor unit is reduced to below 30 dB(A). This allows for flexible placement of the external unit without concerns, even in densely populated residential areas, with no adverse effects on you or your neighbors.

Below **30** **dB(A)**

Test condition:Ambient temp.(DB/WB) 7/6°C.Water outlet temp.55°C

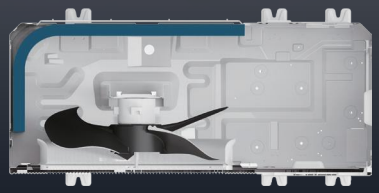
NOAH's noise reduction technology

1 **2**



The enlarged fan allows for lower rotational speeds, reducing noise while maintaining efficiency. Combined with Panasonic's DC brushless motor, it provides a quieter, more energy-efficient operation.

3



The CFD-optimized, low-resistance air duct design ensures even airflow distribution, minimizing air resistance and delivering quieter, smoother airflow.

4

With the integration of a shock-absorbing pad under the compressor and a dual-layer chassis, noise reduction begins at the source, leading to softer sound output for a more comfortable acoustic experience.

5

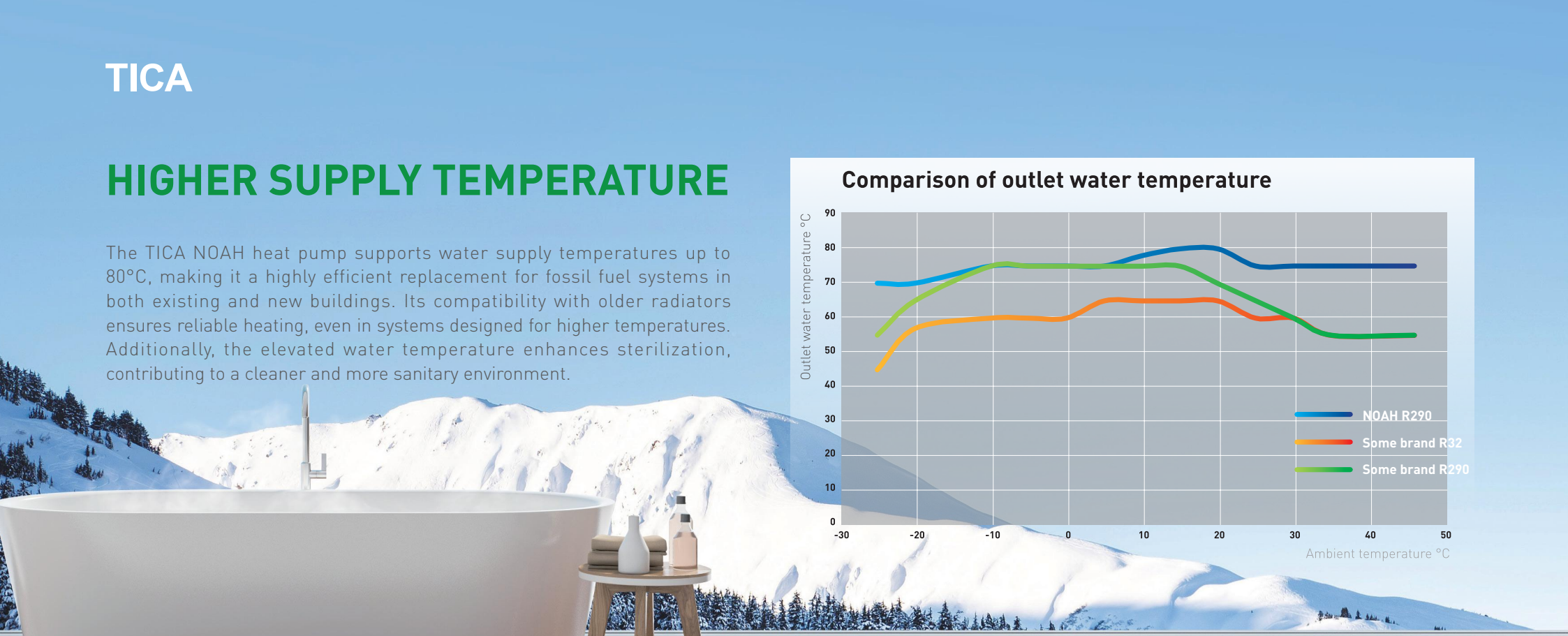
The compressor is enclosed in multiple layers of sound-absorbing and insulating materials. This includes environmentally friendly flame-retardant acoustic insulation and a three-layer noise reduction system, ensuring a significantly quieter operation.

COMPACT DESIGN

This product utilizes an all-in-one design, removing the requirement for an indoor hydraulic module, thereby improving indoor space efficiency. The refrigerant remains entirely within the outdoor circuit, preventing indoor exposure and enhancing operational safety.

HIGHER SUPPLY TEMPERATURE

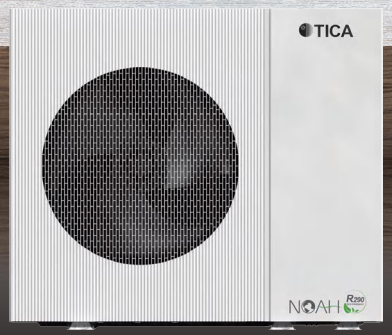
The TICA NOAH heat pump supports water supply temperatures up to 80°C, making it a highly efficient replacement for fossil fuel systems in both existing and new buildings. Its compatibility with older radiators ensures reliable heating, even in systems designed for higher temperatures. Additionally, the elevated water temperature enhances sterilization, contributing to a cleaner and more sanitary environment.

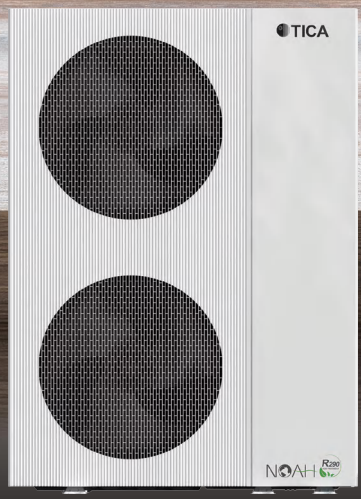


70°C hot water under -25°C ambient temperature

75°C hot water under -10°C ambient temperature

Comparison of outlet water temperature





SMART CONTROL

TICA NOAH App – Comprehensive Smart Home Control

The TICA NOAH app offers a new level of control and comfort by making the management of the home automation solution easier. With TICA's innovative technology, the users have access to:

Remote management:
Control your heat pump from anywhere in real time.

Programmable scheduling:
Automate heating and cooling based on your routine.

Smart scene integration:
Create customized modes for various scenarios.

Energy monitoring:
Track power consumption and manage energy efficiency.

Fault detection and diagnostics:
Get immediate alerts and run diagnostics remotely.

Multi-device management:
Group and control multiple devices with ease.

Personalized settings:
Adjust user preferences for a tailored experience.

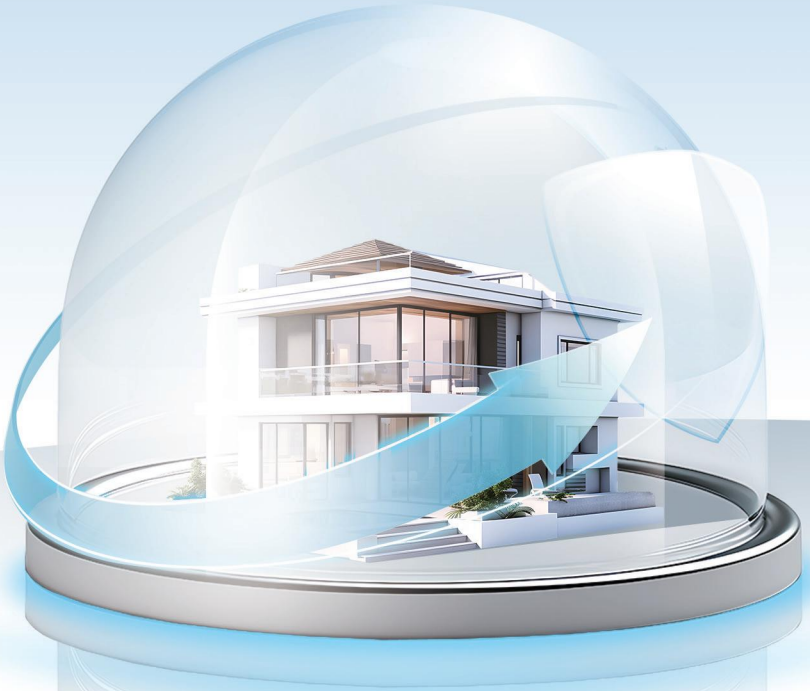
Customer support:
Access technical help anytime you need it.

Firmware updates:
Keep your system updated with the latest improvements.

SYSTEM SECURITY

R290 Refrigerant – Advanced Safety Solutions

Recognizing the safety differences between R290 and refrigerants like R32 or R410A, we have introduced five progressive safety protocols. These measures are specifically designed to minimize accident risks and ensure secure system operation.



Smart sensors

Less refrigerant injection

Water&gas separator

Explosion-proof components

Sealed electric control box

TICA NOAH Monobloc Heat Pump – Enhanced Safety Innovations

1 Sealed Electric Control Box (IP55)

Featuring a fireproof and explosion-proof control box designed for A3 refrigerants, the fully sealed unit protects electrical components from refrigerant leaks, ensuring enhanced operational safety.

2 Explosion-Proof Electrical Systems

Integrated explosion-proof electrical components eliminate potential ignition sources, safeguarding the system.

3 Reduced Refrigerant Volume

The φ5 tubing lowers the refrigerant volume, enhancing the overall safety profile of the system.

4 Comprehensive Design with Exhaust Valve

The all-in-one design with an integrated exhaust valve ensures refrigerant stays outside the building, contributing to a safer indoor environment.

5 Advanced Leak Detection Systems

Double detection via sensors and advanced algorithms ensures that refrigerant leaks are immediately identified, optimizing operational safety.

ABOUT PRODUCTION

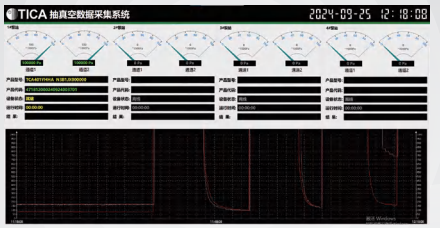
MES Full Life Cycle Management System

Starting from the raw materials, the production of all units is controlled by the MES system, making the entire production process more digital and standardized. Until the NOAH heat pump meets you, every process is traceable.

Auto. detection of water pressure

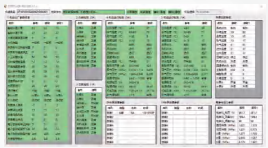
Error-proofing in perfusion

Digital monitoring of vacuum pumping

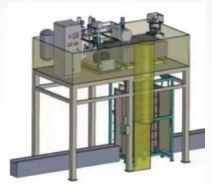


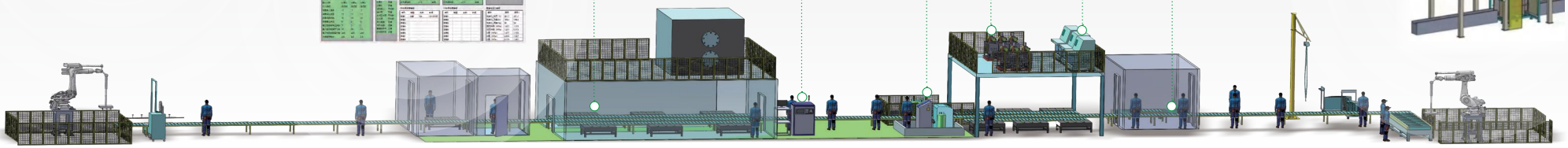
Auto. det of security inspection

Auto. det of operation test

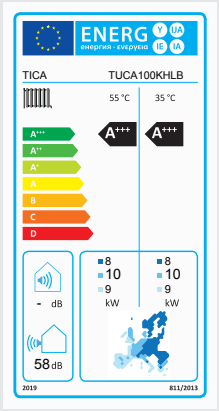


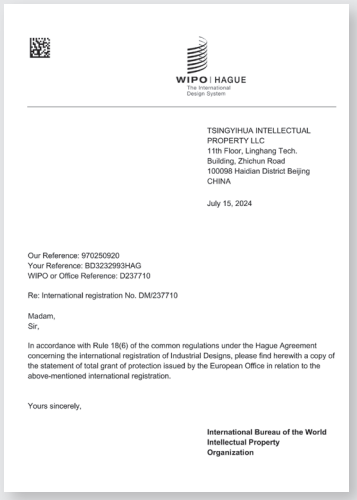
Multiple leak detection





CERTIFICATIONS





WIPO | HAGUE
The International Design System

TSINGYIHUA INTELLECTUAL PROPERTY LLC
11th Floor, Linghang Tech. Building, Zhichun Road
100098 Haidian District Beijing
CHINA

July 15, 2024

Our Reference: 970250920
Your Reference: BD3232993HAG
WIPO or Office Reference: D237710

Re: International registration No. DM/237710

Madam,
Sir,

In accordance with Rule 18(6) of the common regulations under the Hague Agreement concerning the international registration of Industrial Designs, please find herewith a copy of the statement of total grant of protection issued by the European Office in relation to the above-mentioned international registration.

Yours sincerely,

International Bureau of the World Intellectual Property Organization

EUIPO

OPERATIONS DEPARTMENT

W8CCH

Statement of grant of protection under Rule 18bis(1) of the Common Regulations of the Hague Agreement

Alicante, 11/07/2024

International design registration number: **DM/237710**
Number of designs: **2**
Name of the holder: **NANJING TICA CLIMATE SOLUTIONS CO., LTD.**
Date of statement: **11/07/2024**
Date of effect as a grant of protection: **23/04/2024**

The Office hereby confirms that protection is granted in respect of the European Union to all the designs of the abovementioned international registration.

Eamonn KELLY

SPECIFICATIONS

Model			TUCA040KHLB	TUCA060KHLB	TUCA080KHLB	TUCA100KHLB	TUCA120KHLB	TUCA140KHLB	TUCA160KHLB
Power supply			220~240V-50Hz				380~415V-3N-50Hz		
Heating(A7W35)	Capacity	W	4500	6200	8400	10000	12000	14000	15000
	COP	/	5.42	5.25	5.15	5.05	5.15	5.05	5.00
Heating(A7W45)	Capacity	W	4500	6000	8000	10000	12000	14000	15000
	COP	/	4.20	4.05	3.90	3.65	3.90	3.75	3.60
Heating(A7W55)	Capacity	W	4600	6200	8000	9500	12000	14000	15000
	COP	/	3.40	3.35	3.30	3.20	3.30	3.20	3.10
Heating(A2W35)	Capacity	W	4400	5600	7100	8200	11000	12000	13000
	COP	/	4.10	3.90	3.85	3.65	3.75	3.65	3.50
Heating(A-7W35)	Capacity	W	4500	5800	7200	8000	10500	11500	12800
	COP	/	3.20	2.95	3.10	2.85	3.10	3.00	2.85
Cooling(A35W18)	Capacity	W	4300	5600	7000	8600	12000	140000	16000
	EER	/	5.20	4.71	4.95	4.50	4.60	4.30	4.00
Cooling(A35W7)	Capacity	W	4100	5600	6800	7600	12000	13500	14500
	EER	/	3.42	3.01	3.21	3.04	3.05	2.90	2.75
SCOP	Average climate,W35	/	A+++	A+++	A+++	A+++	A+++	A+++	A+++
	Average climate,W55	/	A+++	A+++	A+++	A+++	A++	A++	A++
Net weight		kg	117	117	132	132	168	168	168
Gross weight		kg	137	137	152	152	192	192	192
Net dimension(W*D*H)		mm	1100×458×945	1100×458×945	1100×458×945	1100×458×945	1100×458×1520	1100×458×1520	1100×458×1520
Packing dimension(W*D*H)		mm	1180×600×1115	1180×600×1115	1180×600×1115	1180×600×1115	1180×600×1705	1180×600×1705	1180×600×1705
Erp sound power level		dB	55	55.5	56	57.5	60	61	62
Refrigerant	Type/GWP	/	R290/3	R290/3	R290/3	R290/3	R290/3	R290/3	R290/3
	Charge	kg	0.51	0.51	0.80	0.80	1.1	1.1	1.1
Operating ambient temperature	Cooling	°C	5~46	5~46	5~46	5~46	5~46	5~46	5~46
	Heating	°C	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43
	DHW	°C	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43
Water setting temperature	Cooling	°C	5~25	5~25	5~25	5~25	5~25	5~25	5~25
	Heating	°C	22~80	22~80	22~80	22~80	22~80	22~80	22~80
	DHW	°C	20~75	20~75	20~75	20~75	20~75	20~75	20~75

Fostering a better life

Limiting the temperature increase to 1.5 °C

Follow the Accounts of TICA to See More Solutions

Nanjing TICA Climate Solutions Co., Ltd.
Address: No. 6 Hengye Road, Qixia District, Nanjing City, Jiangsu Province, P.R.C.
E-mail: global@ticachina.com
Website: www.global.tica.com